

several times before the jostled one would give chase. While watching them do this one was reminded of boys at play.

In captivity they lived about two months; towards the end they became cripples, legs and antennæ were lost, the struggle for existence became more arduous and they finally succumbed.

Twice I had the good fortune to see *C. repanda* ovipositing. The female, after several attempts, succeeded in forcing the end of the abdomen, or an extruded portion which acted as an ovipositor, through the hard crust of sand. The hind legs were wide apart, the middle and front legs were extended to their full extent, just touching the ground. Her position was that of sitting on the end of the abdomen. The act lasted about ten minutes, and during that time she showed no alarm at a stick pointed at and almost touching her. How many eggs were laid was not ascertained. Two eggs were obtained, one was a straw-yellow, the other a pearl-gray. The yellow one was 0.50 mm. wide, 0.78 mm. long, the gray one 0.45 mm. wide, 0.75 mm. long. Their shape was a short oval, with corrugated surface of a triangular pattern. At one pole there was a well-defined ridge, above which the egg was flattened and slightly lower than the surrounding portion of the egg. They were held together and also adhered to the sand by a few adhesive filaments.

A new *Corethrella* from Jamaica.

By M. GRABHAM.

Corethrella appendiculata n. sp.

Female.—Head black, covered sparingly with very small yellow hairs; a few long yellow hairs along the borders above the eyes. Eyes black, kidney-shaped. Proboscis and palpi yellow. Antenna: basal joint nearly globular, a few fine golden hairs on its upper surface and around the point of articulation of the second joint there is a sculptured radiating pattern; second joint densely covered with hairs; each of the following joints except the apical one has a band of long hairs above the middle, as well as the longer basal verticel; apical joint narrow, longer than the penultimate. Mesothorax black, with many fine yellow hairs on its surface as well as a few long black ones. Scutellum narrow, with a few long yellow hairs on its border. Metathorax black, nude. Abdomen densely covered with long golden-yellow hairs. Venter black.

Wings pale yellow, densely scaled with hair-like scales on the veins; outer and inner margins with a heavy fringe of coarse, long scales. A

broad curved dark band across each wing beyond the middle, including a portion of the fringe but broken by the absence of dark scales on the third long vein. The band is darkest on the costal and first long veins. There is also a triangular dark area with its base on the lower quarter of the costal vein and its apex on the fourth long vein. The space between these two dark areas is of a richer golden-yellow than the rest of the wing. A small black spot at the extreme base of the wing near the origin of the long veins. Halteres pale yellow. Legs black, very hairy, with apical bands of bright yellow hairs on all the joints. Many yellow hairs interspread with the black ones, especially on the feet. Femora slightly swollen. Ungues much curved, simple and equal.

Male.—Antennae pale yellow; basal and second joints as in the female; all the following joints, including the swollen terminal one, with well-developed basal verticels of long hairs; there are also many long fine hairs arising along each joint; on the last three joints these are much shorter. Ungues equal and simple. Length: One and one-half mm.

Adult larva.—Head pale yellow, compressed antero-posteriorly. Antennae inserted close together at the front of the head, folded back and hidden along the anterior border, only the three apical spines projecting forward; apical spines slender, curved, the longest nearly half as long as the shaft, the other two slightly shorter; inserted with them a short comb-like appendage. Spines of the lateral sclerite about fifteen, stout, not inserted upon a ridge, the larger obsoletely serrate along their con-



CORETHRELLA APPENDICULATA (larva).
1.—Labium.
2.—Process from appendage of 9th segment.

cave borders. Labium with thirteen teeth; the outermost pair very small, the next four pairs progressively larger; central tooth as long as the longest of this series; tooth on each side of the central one only half its length. Mandibles with seven stout teeth, the two innermost largest. Thorax and abdomen glabrous; colored a pale purple, rather darker laterally. Eighth and ninth segments not pigmented. Thorax elliptical, broader than the head. First abdominal segment very short, second widest, seventh and eighth segments much attenuated. Three large simple setae on each side of the two first abdominal segments; a pair on each of the following to the seventh, which has no long lateral setae. A stout subventral hair on each segment from the third to the sixth, arising near the posterior border. Subdorsal hairs apparently absent. A group of several stout branched hairs at the posterior lateral border of the eighth segment. Tube stout, compressed, about half as long again as wide; a pair of branched hairs at the back below the middle, not reaching to the top of the tube; at the posterior aspect of the summit there is a small simple straight hair on each side; in front of this nearer the side is a stout spine, arising from a prominent tubercle, and curved inwards at its apex; a little in front of this again a large pyramidal tubercle with a thorn-like apex and a conspicuous black pigment spot near the top, it has also a long and stout subapical

spine which curves outwards at its point. Ninth segment strongly curved downwards; the dorsal tuft of two pairs of very long double setæ rather widely separated; a little lateral to these a single long stout spine arises from a prominent tubercle on each side. Ventral tuft of four pairs of long simple setæ arising close together. Anal gills four, fleshy, equal, shortly subconical with rounded apices. Between the ventral tuft and the lower pair of anal gills there is a small lateral prominence on each side bearing four blade-like plates serrated along their anterior borders with a number of progressively larger recurved serrations, and with two much longer pointed processes near their bases.

Note on the pupa.—Pale purple in color; thorax and abdomen in the same straight line; floating vertically when at rest at the surface of the water. Each pointed process on the terminal segment has two short spines at the apex, one-half the length of the other; there is another short spine on the outer border at the apical third. Penultimate segment with one small lateral hair; antepenultimate segment with four short lateral hairs on each side. Lateral margin serrate, devoid of a fringe.

Type No. 9960, U. S. N. M.

Notes on the habits.—A few larvæ were found in a hollow tree in Kingston, Jamaica, about the middle of May, 1906. No young larvæ were found. The water was brown and thick, and contained numerous minute crustaceans, upon which they feed. Observed in a breeding jar they only occasionally came to the surface and then lay horizontally like anopheline larvæ. Usually they remained at the bottom and displayed marked activity, the head and anterior part of the body being now and then rapidly jerked from side to side in their efforts to capture crustaceans. No visible movements, creating currents such as are seen in many culicid larvæ in the organs surrounding the mouth, were noticed. The hinder part of the body was apparently kept anchored by the appendages on the terminal segment. The larvæ were often seen to suspend themselves by these appendages to the side of the jar. When disturbed they wriggled with quick lateral movements in a backward direction; this appeared to be their normal method of progression. They differ from the larvæ of *C. brakeleyi* in the different shape of the head and arrangement of setæ and in the absence of the chitinous plates on the seventh and eighth segments. The pupa stage lasted about three weeks.